City of Miami Beach

Restroom Index Manual

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Introduction

The purpose of this manual is to provide information about the city's Restroom Index program. This includes information on the areas assessed, assessment instructions, data analysis and collection, and next steps. Restrooms that are assessed include:

- South Pointe Park (M-S 7am-8pm)
- Majory Stoneman Douglas (M-F 7am-8pm/SS 8am-12am)
- 6th Street & Ocean – Lummus Park (M-F 7am-10pm/SS 8am-12am)
- 10th Street & Ocean – Lummus Park (M-F 7am-10pm/SS 8am-12am)
- 14th Street & Ocean – Lummus Park (M-F 7am-10pm/SS 8am-12am)
- 21st Street & Ocean – Collins Park (M-F 7am-10pm/SS 8am-12am)
- 35th Street & Ocean – Pancoast Park (M-S 7am-8pm)
- 46th Street & Collins – Indian Beach Park (M-S 7am-8pm)
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- NSOSP 80th Street & Collins (M-S 7am-8pm)
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- Stillwater (M-S 8am-8pm)
- Crespi (M-S 8am-8pm)
- Tatum (M-S 8am-8pm)
- North Shore Park Youth Center (By Tennis) (M-F 8am-9pm/SS 8am-8pm)
- Fairway Park (SS 8am-8pm)
- Normandy Isle (Restrooms by field) (M-S 8am-8pm)
- Muss (M-F 8am-5pm)
- Maurice Gibb Park (M-S 8am-5pm)
- Soundscape (W/R 7pm – 10pm)
- Flamingo Baseball Stadium (M-S 8am-5pm)
- Flamingo Outside Tennis (M-S 8am-8pm)
- Flamingo Football Stadium (Concession Area) (M-S 6am-9pm)
- South Point Drive and Pier Park (7am-Sunset)

Objective

To monitor impacts of recently implemented initiatives in order to identify areas of improvement and assure the quality of services.

Background

The Miami Beach Restroom Index is an objective measurement of performance ranging from 1.0 (Very Well Maintained) to 6.0 (Not Maintained) and includes appearance and cleanliness assessments for interior (toilet and sink areas) and exterior areas. Criteria for each area are listed below:

Cleanliness Toilet Area

- Floors mopped/clean/no stains
- Toilets/urinal clean/no litter visible/ no leaks
- No unpleasant odor
- Toilet paper available/usable
- No graffiti

Cleanliness Sink Area

- Floors mopped/clean/no stains
- Sink and/or mirror clean/no leaks
- Trash can no more than ¾ full
- Walls clean/no graffiti
- Soap dispenser clean

Appearance Interior

- Stable/operable toilet/urinal partition enclosures
- Stall doors rust free/fully painted/latch and hinge functional
- Sink faucets and soap dispenser functional
- Hand dryer or paper dispenser functional
- All interior lights functional

Appearance / Cleanliness Exterior

- Signage visible and clean
- No graffiti
- No unpleasant odor
- No trash/litter
- Entrance door rust free/fully painted/functional (rollup or traditional)

The results of the assessments are used to monitor the impacts of recently implemented initiatives to target areas for future improvements, and assure the quality of services. Quarterly sample sizes are set to ensure no greater than $\pm$ 7.0 percentage point sampling error given the 95% confidence level.

Scheduling

The hours of operation vary from restroom to restroom. Restroom index assessments are scheduled as follows:

Monday to Sunday:

I. 8:00AM to 12:00PM
II. 12:00PM to 4:00PM
III. 4:00PM to 8:00PM
IV. 8:00PM to 10:00PM

Shifts are scheduled in 4 hour increments based on time of the day to enable statistically valid sample. For statistical validity, each assessment must be properly distributed; otherwise the sample size would be small and produce inaccurate results.

Shifts can occur during the weekday and/or the weekend. Assessors can sign-up for shifts or be assigned; any changes to the schedule must be made at least 24 hours prior to the date of the assessment.

Based on the calculated sample size (see page 7), 46 assessments per quarter are required. The following distribution shows that 46 assessments need to be split evenly between male assessors and female assessors so that each complete 23 assessments per quarter. The 8:00pm to 12:00am shift has a smaller number of shifts scheduled because during this time, most restrooms are already closed and not much data can be collected.

	Mon - Fri				Sat - Sun				Total
	I	II	III	IV	I	II	III	IV	
# of Male shifts	4	4	4	1	3	3	3	1	23
# of Female shifts	4	4	4	1	3	3	3	1	23
Total	8	8	8	2	6	6	6	2	46
	26				20				

Procedure

For every quarter, a schedule is created based on the shifts distribution so that assessors may sign up for a shift or multiple shifts in the schedule. Restroom assessments are to be done using the city vehicle.

Data Analysis

Scores:

Quarterly reports help to monitor the data collected. We review average scores that range from 1.0 to 6.0, with 1.0 being the best possible score. The city's goal is for 90% of the assessments to receive a score of 2.0 or better and all assessments to score 1.5 or better.

The data reports are used to identify positive/stable performance and criteria. We are able to identify issues in locations relating to cleanliness and appearance to address poor performance and implement strategies to improve.

Sample Size:

To determine the sample size to be utilized, three factors were taken into account: population size, confidence level, and margin of error.

- Population: There are a total of 54 restrooms (27 male and 27 female) assessed over 4 different 4 hour shifts and 365 days in a year. However, because all 27 restrooms of a given gender are assessed in one shift, the population is determined by multiplying the two types of restrooms (male and female), the number of shifts in a day, and the number of days in a year, which yields **2,920**. In other words, to assess every restroom, every available shift and every day of the year, it would take 2,920 assessments per year. This number is much too large and that is why a valid sample size is needed.
- Confidence Level: A confidence level is a percentage that expresses how sure the results can be. This tells us how often the true percentage of the population would lie within the confidence interval that is to be calculated. For example, a 90% confidence level allows us to claim that 90% of the time, the true mean would be within the confidence interval. The most common confidence level is **95%**. A higher confidence level requires a larger sample size.
- Margin of Error: The margin of error (also known as the confidence interval) is a percentage displayed with a plus or minus symbol. This is what allows the data to have some room for acceptable error. For example, if we claim the mean score is 2.0, we would be wrong whenever the mean is not 2.0. But a confidence interval allows us to say the true mean lies within an interval (such as between 1.8 and 2.2) and this claim would be least likely to be incorrect. A higher margin of error results in a larger interval and this would require a smaller sample size. A lower margin of error is preferred to obtain more accurate results since the data would be within a smaller interval, however it would require a larger sample size.

Together, these factors can determine a proper sample size and present the data in a way so that we can claim that we are, for example, 95% confident the true mean score of a population lies within 1.8 and 2.2.

The sample size is determined through the following formulas:

The first formula determines a sample size when the population is unknown.

$$SS = \frac{(Z - score)^2 \times 0.25}{ME^2}$$

The second formula determines a new, or updated, sample size that takes population into account.

$$New\ SS = \frac{SS}{1 + (SS - 1/Pop)}$$

- SS = sample size
- Z-score = number that corresponds to a given confidence level. For 95% we use 1.96
- 0.25 = product of the standard deviation times 1 minus the standard deviation. Because the standard deviation is unknown, we use 0.5 and the product of 0.5 x (1 - 0.5) = 0.25
- ME = margin of error; 5% is 0.05, 7% is 0.07, etc.
- Pop = population

Once we have a final sample size, we divide that number by 4 to determine our quarterly sample size.

$$SS\ per\ Quarter = \frac{New\ SS}{4}$$

If we choose our margin of error to be 7%, then our required sample size is **46** assessments per quarter. By completing 46 assessments per quarter, data can be presented with a $\pm$7% margin of error.

Calculations:

For sample size
Population: 2,920
Z-score: 1.96 (for 95%)
ME: 7%
SS: 196
New SS: 183.7
SS per Quarter (rounded up): 46

$$SS = \frac{(1.96)^2 \times 0.25}{0.07^2} = 196$$

$$New\ SS = \frac{196}{1 + (195/2{,}920)} = 183.7$$

$$SS\ per\ Quarter = \frac{183.7}{4} = 45.9$$

Sample Reports: The following is a sample report to serve as an example of how the data is presented.

The following tables show index scores of different categories for a given quarter.

A subcategory score (such as the toilet area score and sink score) is determined by adding all the individual scores for that subcategory and dividing by the total number of individual scores.

$$Subcategory\ Score = \frac{x}{n}$$

X = sum of all sub-factor scores
N = number of assessments

The overall cleanliness score is determined by taking the average of the subcategories (toilet area and sink area).

$$Overall\ Score = \frac{(s1+s2)}{2}$$

S1 = toilet area score

S2 = sink area score

The overall Restroom Score is determined by taking the average of the subcategories (toilet area and sink area) as well as the interior and exterior scores.

$$Overall\ Restroom\ Score = \frac{(s1+s2+s3+s4)}{4}$$

S1 = toilet area score

S2 = sink area score

S3 = bathroom interior score

S4 = bathroom exterior score

A fiscal year average tells us the overall performance for a certain year. Similar to the overall restroom score, the FY Average is determined by taking the average of the 4 quarters within the given fiscal year.

$$FY\ Average = \frac{(q1+q2+q3+q4)}{4}$$

Q1 = score from 1st quarter

Q2 = score from 2nd quarter

Q3 = score from 3rd quarter

Q4 = score from 4th quarter

The "% change in prior Quarter" shows by how much the current quarter improved or decreased from the previous quarter in terms of percentage.

$$\%\ change\ in\ prior\ Qtr = \frac{(X-Y)}{Y}$$

X = current quarter score

Y = previous quarter score

The “% change in prior FY Quarter” shows by how much the current quarter improved or decreased from the same quarter a year prior. For example, if we are looking at quarter 1 from the FY16/17, we are comparing it to quarter 1 from the FY15/16.

$$\%\ change\ in\ prior\ FY\ Qtr = \frac{X}{Y} - 1$$

X = current quarter score

Y = score from same quarter one year prior

The “% change from base year Quarter” shows by how much the current quarter improved or decreased from the same quarter in the base year. If the base year is FY 15/16 then we are comparing whatever is the current quarter’s score to that same quarter’s score in the base year, FY 15/16. For example, if we are looking at quarter 1 from the FY 17/18, we are comparing it to quarter 1 from the FY 15/16 and not from the FY 16/17 because the base year is FY 15/16.

$$\%\ change\ from\ base\ year\ Qtr = \frac{X}{Y} - 1$$

X = current quarter score

Y = score from same quarter from the base year

When dealing with percentages instead of index scores, the following formulas are altered:

$$Subcategory\ Score\ \% = \frac{x}{n} \times 100$$

X = number of sub-factor scores with a score of 2.0 or better
N = number of assessments

$$Overall\ Restroom\ Score = \frac{(x1 \times 2) + x2 + x3}{4}$$

X1 = Overall cleanliness score

X2 = Bathroom interior score

X3 = Bathroom exterior score

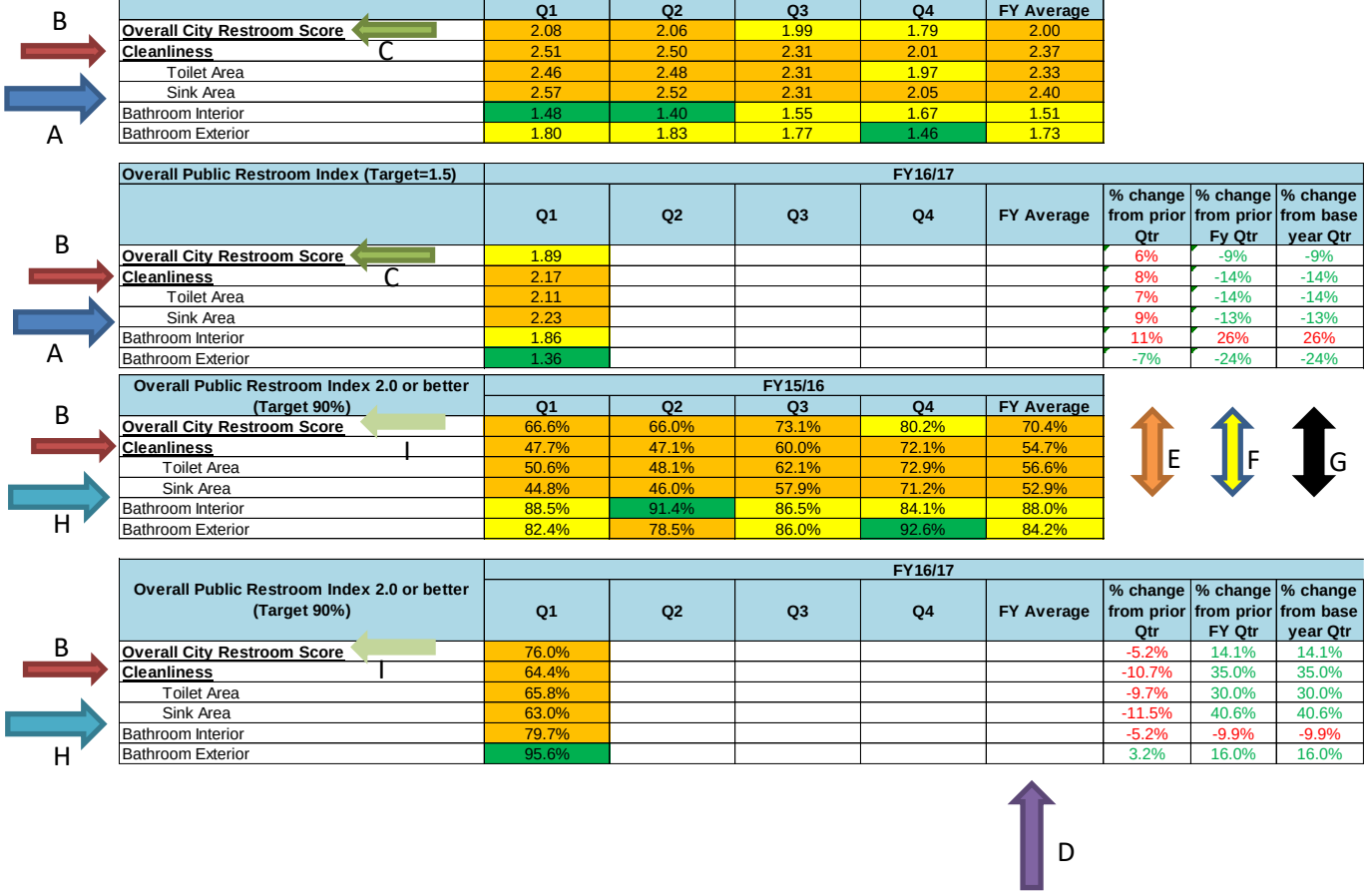
Restroom Index Score For All Public Restrooms Citywide

Overall Public Restroom Index (Target=1.5)	FY15/16				
	Q1	Q2	Q3	Q4	FY Average
Overall City Restroom Score	2.08	2.06	1.99	1.79	2.00
Cleanliness	2.51	2.50	2.31	2.01	2.37
Toilet Area	2.46	2.48	2.31	1.97	2.33
Sink Area	2.57	2.52	2.31	2.05	2.40
Bathroom Interior	1.48	1.40	1.55	1.67	1.51
Bathroom Exterior	1.80	1.83	1.77	1.46	1.73

Overall Public Restroom Index (Target=1.5)	FY16/17							
	Q1	Q2	Q3	Q4	FY Average	% change from prior Qtr	% change from prior Fy Qtr	% change from base year Qtr
Overall City Restroom Score	1.89					6%	-9%	-9%
Cleanliness	2.17					8%	-14%	-14%
Toilet Area	2.11					7%	-14%	-14%
Sink Area	2.23					9%	-13%	-13%
Bathroom Interior	1.86					11%	26%	26%
Bathroom Exterior	1.36					-7%	-24%	-24%

Overall Public Restroom Index 2.0 or better (Target 90%)	FY15/16				
	Q1	Q2	Q3	Q4	FY Average
Overall City Restroom Score	66.6%	66.0%	73.1%	80.2%	70.4%
Cleanliness	47.7%	47.1%	60.0%	72.1%	54.7%
Toilet Area	50.6%	48.1%	62.1%	72.9%	56.6%
Sink Area	44.8%	46.0%	57.9%	71.2%	52.9%
Bathroom Interior	88.5%	91.4%	86.5%	84.1%	88.0%
Bathroom Exterior	82.4%	78.5%	86.0%	92.6%	84.2%

Overall Public Restroom Index 2.0 or better (Target 90%)	FY16/17							
	Q1	Q2	Q3	Q4	FY Average	% change from prior Qtr	% change from prior FY Qtr	% change from base year Qtr
Overall City Restroom Score	76.0%					-5.2%	14.1%	14.1%
Cleanliness	64.4%					-10.7%	35.0%	35.0%
Toilet Area	65.8%					-9.7%	30.0%	30.0%
Sink Area	63.0%					-11.5%	40.6%	40.6%
Bathroom Interior	79.7%					-5.2%	-9.9%	-9.9%
Bathroom Exterior	95.6%					3.2%	16.0%	16.0%



The following table shows the percentage score of individual restroom locations. The Overall Score is determined by the following:

$$Overall\ Score = \frac{x}{n}$$

X = Sum of all individual restroom location scores.

N = amount of individual locations

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Percentage of Assessments scoring 2.0 or better (Target 90%)

Percentage of Assessments scoring 2.0 or better (Target 90%)	FY15/16				
	Q1	Q2	Q3	Q4	FY Average
Overall	66.60%	66.00%	73.1%	80.2%	70.4%
Bathroom Location					
South Pointe Park (M-S 7am-8pm)	79.1%	67.2%	88.0%	85.6%	79.0%
Majory Stoneman Douglas (M-F7am-8pm/SS8am-12am)	58.1%	46.8%	50.0%	68.5%	55.6%
6th Street & Ocean - Lummus Park (M-F7am-10pm/SS8am-12am)	74.4%	66.7%	77.2%	75.0%	72.7%
10th Street & Ocean - Lummus Park (M-F7am-10pm/SS8am-12am)	61.1%	56.3%	50.9%	66.2%	59.1%
14th Street & Ocean - Lummus Park (M-F7am-10pm/SS8am-12am)	40.2%	50.0%	38.0%	51.0%	44.6%
21st Street & Ocean - Collins Park (M-F7am-10pm/SS8am-12am)	68.3%	69.9%	77.3%	76.7%	72.2%
35th Street & Ocean - Pancoast Park (M-S7am-8pm)	73.1%	75.8%	84.5%	81.3%	77.7%
46th Street & Collins - Indian Beach Park (M-S7am-8pm)	81.1%	75.0%	83.7%	84.6%	80.7%
53rd Street & Collins - Beach View Park (M-S7am-8pm)	94.5%	90.6%	85.0%	87.0%	90.3%
64th Street & Collins - Allison Park(M-S7am-8pm)	63.8%	68.2%	60.2%	87.0%	68.9%
Unidad Beachfront (7am-8pm SS)	88.9%	92.3%	88.5%	98.5%	92.2%
NSOSP 80th Street & Collins (M-S7am-8pm)	36.9%	42.0%	46.4%	52.0%	43.2%
NSOSP 83rd Street & Collins (M-S7am-8pm)	43.8%	44.2%	65.9%	68.5%	53.4%
NSOSP 84th Street & Collins (M-S7am-8pm)	51.2%	80.7%	80.3%	73.7%	67.2%
Stillwater (M-S 8am-8pm)	64.7%	66.9%	86.1%	92.7%	74.8%
Crespi (M-S 8am-8pm)	49.3%	53.2%	83.3%	96.7%	66.2%
Tatum (M-S 8am-8pm)	75.7%	73.3%	93.8%	92.1%	81.0%
North Shore Park Youth Center (By Tennis) (M-F8am-9pm/SS8am-	69.1%	64.3%	100.0%	100.0%	81.0%
Fairway Park (SS8am-8pm)	82.0%	64.3%	100.0%	94.2%	81.4%
Normandy Isle (Restrooms by field) (M-S8am-8pm)	88.2%	82.4%	96.9%	90.6%	87.6%
Muss (M-F 8am-5pm)	58.3%	52.1%	70.0%	59.4%	58.3%
Maurice Gibb Park (M-S8am-5pm)	46.2%	31.3%	75.0%	75.0%	46.0%
Soundscape (W/R 7pm-10pm)	62.5%				62.5%
Flamingo Baseball Stadium (M-S8am-5pm)		50.0%			50.0%
Flamingo Outside Tennis (M-S8am-8pm)	80.1%	86.1%	75.0%	91.2%	83.8%
Flamingo Football Stadium (Concession Area) (M-S6am-9pm)	83.3%	83.7%	75.0%	94.4%	86.2%
South Point Drive and Pier Park (7am-Sunset	38.8%	25.0%	33.7%	43.0%	35.0%

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Percentage of Assessments scoring 2.0 or better (Target 90%)	FY16/17							
	Q1	Q2	Q3	Q4	FY Average	% Change from prior Qtr	% Change from prior FY Qtr	% change from base year Qtr
Overall	76.00%					-5.2%	14.1%	14.1%
Bathroom Location								
South Pointe Park (M-S 7am-8pm)	89.3%					4.3%	12.9%	12.9%
Majory Stoneman Douglas (M-F7am-8pm/SS8am-12am)	75.7%					10.5%	30.3%	30.3%
6th Street & Ocean - Lummus Park (M-F7am-10pm/SS8am-12am)	77.4%					3.2%	4.0%	4.0%
10th Street & Ocean - Lummus Park (M-F7am-10pm/SS8am-12am)	81.8%					23.6%	33.9%	33.9%
14th Street & Ocean - Lummus Park (M-F7am-10pm/SS8am-12am)	48.2%					-5.5%	19.9%	19.9%
21st Street & Ocean - Collins Park (M-F7am-10pm/SS8am-12am)	65.7%					-14.3%	-3.8%	-3.8%
35th Street & Ocean - Pancoast Park (M-S7am-8pm)	77.9%					-4.2%	6.6%	6.6%
46th Street & Collins - Indian Beach Park (M-S7am-8pm)	73.5%					-13.1%	-9.4%	-9.4%
53rd Street & Collins - Beach View Park (M-S7am-8pm)	85.7%					-1.5%	-9.3%	-9.3%
64th Street & Collins - Allison Park(M-S7am-8pm)	78.4%					-9.9%	22.9%	22.9%
Unidad Beachfront (7am-8pm SS)	83.6%					-15.1%	-6.0%	-6.0%
NSOSP 80th Street & Collins (M-S7am-8pm)	54.8%					5.4%	48.5%	48.5%
NSOSP 83rd Street & Collins (M-S7am-8pm)	65.6%					-4.2%	49.8%	49.8%
NSOSP 84th Street & Collins (M-S7am-8pm)	63.5%					-13.8%	24.0%	24.0%
Stillwater (M-S 8am-8pm)	74.1%					-20.1%	14.5%	14.5%
Crespi (M-S 8am-8pm)	82.8%					-14.4%	68.0%	68.0%
Tatum (M-S 8am-8pm)	77.5%					-15.9%	2.4%	2.4%
North Shore Park Youth Center (By Tennis) (M-F8am-9pm/SS8am-	95.4%					-4.6%	38.1%	38.1%
Fairway Park (SS8am-8pm)	87.5%					-7.1%	6.7%	6.7%
Normandy Isle (Restrooms by field) (M-S8am-8pm)	85.3%					-5.8%	-3.3%	-3.3%
Muss (M-F 8am-5pm)	63.3%					6.6%	8.6%	8.6%
Maurice Gibb Park (M-S8am-5pm)	75.0%					0.0%	62.3%	62.3%
Soundscape (W/R 7pm-10pm)	100.0%						60.0%	60.0%
Flamingo Baseball Stadium (M-S8am-5pm)								
Flamingo Outside Tennis (M-S8am-8pm)	92.0%					0.9%	14.9%	14.9%
Flamingo Football Stadium (Concession Area) (M-S6am-9pm)	68.3%					-27.6%	-18.0%	-18.0%
South Point Drive and Pier Park (7am-Sunset	40.2%					-6.5%	3.6%	3.6%

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D E F G

Training

The following are training slides on how each area should be assessed.

BATHROOMINDEX
TOILET/URINALAREACLEANLINESS

The following index will be used to rate the public bathroom interior area, toilet area, sink area, and exterior.

Bathroom Index – Toilet/urinal CLEANLINESS	Floors mopped/clean /no stains	Toilets/urinal clean/no litter visible/ no leaks	No unpleasant odor	Toilet paper available/usable in dispenser	No Graffiti
Extremely Well Maintained					

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BATHROOMINDEX SINKINTERIORAREACLEANLINESS

The following index will be used to rate the public bathroom interior area, toilet area, sink area, and exterior.

Bathroom Index – Sink CLEANLINESS	Floors mopped/clean/no stains	Sink and/or mirrors clean/no leaks	Trash can no more than ¾ full	Walls clean/no Graffiti	Soap dispenser clean
Extremely Well Maintained					

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BATHROOMINDEX INTERIORAREAAPPEARANCE

The following index will be used to rate the public bathroom interior area, toilet area, sink area, and exterior.

Bathroom Index – Interior APPEARANCE	Stable/operable toilet/urinal partition enclosure	Stall doors rust free/fully painted/latch &hinge functional	Sink faucets and soap dispenser functional	Hand dryers or paper disposal functional	All interior lights functional
Extremely Well Maintained			 		

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BATHROOMINDEX EXTERIORAREAAPPEARANCE&CLEANLINESS

The following index will be used to rate the public bathroom interior area, toilet area, sink area, and exterior.

Bathroom Index – Exterior APPEARANCE& CLEANLINESS	Signage visible/legible & clean	No Graffiti	No unpleasant odor	No trash/litter	Entrance door rust free/full painted/functional (rollup or traditional)
Extremely Well Maintained					

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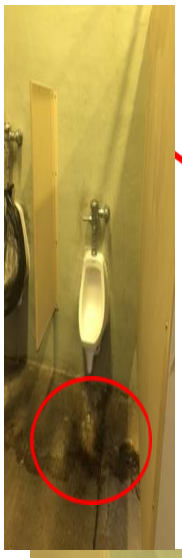
NO-NOTMAINTAINED









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Conclusion

The Restroom Index program is utilized to communicate the status of the level of service regarding public restrooms in Miami Beach. The results, ranging from 1.0 (very well maintained) to 6.0 (not maintained), provide an understanding of what criteria perform well and which do not. By analyzing the results, change can be made in areas in need of improvement so that the City of Miami Beach may provide better quality public restrooms. Quarterly data is shared with the commission via LTC with input from responsible department(s) regarding opportunities to improve performance.